

Application number 09/712,381
Amendment dated November 5, 2004
Reply to office action mailed May 5, 2004

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (original) A method of generating pixels in a graphics system comprising:

- providing a plurality of sub-samples;
- providing a source pixel;
- determining which of the plurality of sub-samples are covered by the source pixel, and which of the plurality of sub-samples are not covered by the source pixel;
- filtering the sub-samples which are covered by the source pixel;
- blending the filtered sub-samples with the source pixel to create a blended sub-sample; and
- filtering the sub-samples which are not covered by the source pixel together with the blended sub-sample.

Claim 2 (original) The method of claim 1 wherein the filtering the sub-samples which are covered by the source pixel, is done by averaging the sub-samples which are covered by the source pixel.

Claim 3 (original) The method of claim 2 wherein the filtering the sub-samples which are not covered by the source pixel together with the blended sub-sample, is done by averaging the sub-samples which are not covered by the source pixel together with the blended sub-sample.

Claim 4 (original) The method of claim 3 further comprising before the filtering the sub-samples which are not covered by the source pixel together with the blended sub-sample, weighting the blended sub-sample.

Application number 09/712,381
Amendment dated November 5, 2004
Reply to office action mailed May 5, 2004

PATENT

Claim 5 (previously presented) The method of claim 4 further comprising before weighting the blended sub-sample, determining the number of covered sub-samples, and wherein the weighting of the blended sub-sample is done by multiplying the blended sub-sample by the number of covered sub-samples.

Claim 6 (original) The method of claim 1 further comprising replacing the sub-samples which are covered by the source pixel with the blended sub-sample.

Claim 7 (previously presented) An apparatus for generating pixels in a graphics system comprising:
a memory for storing and providing sub-samples;
a graphics pipeline for providing an image, and determining which sub-samples are covered by the image, and which sub-samples are not covered by the image;
a first filter for filtering covered sub-samples and providing a first filter output;
a blender for blending the image with the output of the first filter and providing a blender output; and
a second filter for filtering the blender output with the sub-samples which are not covered by the image.

Claim 8 (original) The apparatus of claim 7 wherein the first filter and the second filter are averaging circuits.

Claim 9 (original) The apparatus of claim 8 wherein the second filter is also for weighting the blender output.

Claim 10 (original) The apparatus of claim 7 wherein the blender output provides a new sub-sample, and where the new sub-sample replaces in memory the sub-samples covered by the image.

Claim 11 (previously presented) An apparatus for generating pixels in a graphics system comprising:

Application number 09/712,381
Amendment dated November 5, 2004
Reply to office action mailed May 5, 2004

PATENT

a sub-sample memory having an first output and a second output;
a first filter having an output and an input, the input coupled to the first sub-sample memory output;
a blender having an output, a first input, and a second input, the first input coupled to the first filter output;
a graphics pipeline having an output coupled to the second blender input; and
a second filter having a first input and a second input, the first input coupled to the second sub-sample memory output and the second input coupled to the blender output.

Claim 12 (original) The apparatus of claim 11 wherein the sub-sample memory stores a plurality of sub-samples which are associated with a pixel, and wherein the graphics pipeline provides a source pixel, and determines which of the sub-samples associated with the pixel are covered by the source pixel, and which of the sub-samples associated with the pixel are not covered by the source pixel.

Claim 13 (original) The apparatus of claim 12 wherein the sub-sample memory outputs on the first sub-sample memory output the sub-samples associated with the pixel which are covered by the source pixel, and outputs on the second sub-sample memory output the sub-samples associated with the pixel which are not covered by the source pixel.

Claim 14 (original) The apparatus of claim 13 wherein first filter averages the sub-samples at its input, and outputs an average, and the blender blends the signals at its inputs, and outputs a blend.

Claim 15 (original) The apparatus of claim 14 wherein the second filter filters the sub-samples at its first input and the blend at its second input.

Claim 16 (original) The apparatus of claim 15 wherein the second filter further comprises an output for providing a pixel.

Claim 17 (original) A computer system comprising;

Application number 09/712,381
Amendment dated November 5, 2004
Reply to office action mailed May 5, 2004

PATENT

a central processing unit (CPU);
a main memory coupled to the CPU; and
an apparatus for generating pixels in a graphics system as set forth in claim 11,
coupled to the CPU.

Claim 18 (original) An apparatus for generating pixels in a graphics system
comprising:

a memory for storing sets of a first number of sub-samples, where each set of sub-samples is associated with a pixel;
a second number of filters, each filter coupled to the memory; and
a third number of blenders, each coupled to one of the second number of filters,
wherein the third number is less than the first number.

Claim 19 (original) The apparatus of claim 18 wherein the third number is one.

Claim 20 (original) The apparatus of claim 19 wherein the first number is 4.

Claim 21 (original) The apparatus of claim 19 wherein the first number is 8.

Claim 22 (previously presented) A method of generating pixels in a graphics
system comprising:

receiving a plurality of sub-samples from a memory;
receiving a source pixel;
receiving coverage information indicating which of the plurality of sub-samples
are covered by the source pixel, and which of the plurality of sub-samples are not covered by the
source pixel;
filtering the sub-samples that are covered by the source pixel;
blending the filtered sub-samples with the source pixel to create a blended sub-
sample;
storing the blended sub-sample in the memory, overwriting the sub-samples that
are covered by the source pixel; and

Application number 09/712,381
Amendment dated November 5, 2004
Reply to office action mailed May 5, 2004

PATENT

filtering the sub-samples that are not covered by the source pixel together with the blended sub-sample.

Claim 23 (previously presented) The method of claim 22 wherein when the sub-samples that are not covered by the source pixel are filtered with the blended sub-sample, the blended sub-sample is first multiplied by the number of sub-samples covered by the source pixel.

Claim 24 (previously presented) The method of claim 23 wherein the source pixels is received from a graphics pipeline.

Claim 25 (new) A method of generating pixels in a graphics system using a single blender, the method comprising:

receiving a plurality of sub-samples;

receiving a source pixel;

receiving coverage information as to which of the plurality of sub-samples are covered by the source pixel, and which of the plurality of sub-samples are not covered by the source pixel;

filtering the sub-samples which are covered by the source pixel to generate a filtered result;

using a single blender to blend the filtered result and the source pixel to create a blended sub-sample; and

filtering the sub-samples which are not covered by the source pixel together with the blended sub-sample.

Claim 26 (new) The method of claim 25 wherein the filtering the sub-samples which are covered by the source pixel, is done by averaging the sub-samples which are covered by the source pixel.

Claim 27 (new) The method of claim 26 wherein the filtering the sub-samples which are not covered by the source pixel together with the blended sub-sample, is done

Application number 09/712,381
Amendment dated November 5, 2004
Reply to office action mailed May 5, 2004

PATENT

by averaging the sub-samples which are not covered by the source pixel together with the blended sub-sample.

Claim 28 (new) A method of generating pixels in a graphics system comprising:

receiving a plurality of sub-samples;

receiving a source pixel;

receiving coverage information as to which of the plurality of sub-samples are covered by the source pixel, and which of the plurality of sub-samples are not covered by the source pixel;

during a first clock cycle, filtering the sub-samples which are covered by the source pixel to generate a filtered result;

during a second clock cycle, blending the filtered result with the source pixel to create a blended sub-sample; and

during a third clock cycle, filtering the sub-samples which are not covered by the source pixel together with the blended sub-sample,

wherein the second clock cycle occurs after the first clock cycle and before the third clock cycle.

Claim 29 (new) The method of claim 28 wherein the filtering the sub-samples which are covered by the source pixel, is done by averaging the sub-samples which are covered by the source pixel.

Claim 30 (new) The method of claim 29 wherein the filtering the sub-samples which are not covered by the source pixel together with the blended sub-sample, is done by averaging the sub-samples which are not covered by the source pixel together with the blended sub-sample.

Application number 09/712,381
Amendment dated November 5, 2004
Reply to office action mailed May 5, 2004

PATENT

Claim 31 (new) The method of claim 30 further comprising before the filtering the sub-samples which are not covered by the source pixel together with the blended sub-sample, weighting the blended sub-sample.

Claim 32 (new) The method of claim 31 further comprising before weighting the blended sub-sample, determining the number of covered sub-samples, wherein the weighting of the blended sub-sample is done by multiplying the blended sub-sample by the number of covered sub-samples.